

What Is Claimed Is :

1. A power supplying apparatus for a vehicle, comprising:  
an electric power line for being wired in an  
interior of a vehicle from a battery and for supplying a  
power to various kinds of loads of said vehicle;  
plural short sensors for detecting a short between  
plural sections of said electric power lines; and  
a control circuit for specifying said short section  
of said electric power line in accordance with a short  
detection condition of said plural short sensors.
2. A power supplying apparatus for a vehicle according  
to claim 1, characterized in that  
between said short sensor and another short sensor,  
a connector for connecting said electric power lines each  
other is arranged.
3. A power supplying apparatus for a vehicle, comprising:  
a load drive use electric power line for being wired  
in an interior of a vehicle from a battery through a fuse;  
a control circuit drive use electric power line for  
being wired in said interior of said vehicle from a  
battery through another fuse;  
a control apparatus including:  
a control circuit for being supplied a power  
from said control circuit drive use electric power line,

and

5 a load drive circuit provided between said load drive use electric power line and said load and for controlling a supply of a power to said load in response to a signal from said control circuit.

4. A power supplying apparatus for a vehicle according to claim 3, characterized in that

10 an over-current detection apparatus provided between said load drive circuit and said fuse and for detecting an over-current condition of said load drive circuit and further for transmitting said detected current condition to said control circuit; and

15 a shutdown circuit for performing a shutdown an electric line between said fuse and said load drive circuit in response to a signal from said control circuit.

5. A power supplying apparatus for a vehicle according to claim 3, characterized in that

20 a short sensor for detecting an abnormality according to a short of said load drive use electric power line; and

25 a shutdown circuit for performing a shutdown an electric line between said fuse and said load drive circuit in response to a signal from said short circuit through said control circuit.

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6. A power supplying apparatus for a vehicle according to claim 3, characterized in that

said control apparatus includes a communication control circuit;

5 one control apparatus and another control apparatus are connected by a communication line each other; and

in response to a condition of a switch which is inputted to said one control apparatus, a supply and a stop of the power against to a load of said another control apparatus is constituted for enable to control.

7. A power supplying apparatus for a vehicle, comprising:  
a first power supply system for being wired in an interior of a vehicle through a fuse from a battery and for  
15 supplying a power to a various kinds of loads of said vehicle;

a second power supply system for being wired in said interior of said vehicle through another fuse from a battery and for supplying the power to a control circuit  
20 of a control apparatus for controlling said load; and

a protection circuit for detecting a short abnormality of said first power supply system and for practicing a protection control of said first power supply system through said control circuit.

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8. A power supplying apparatus for a vehicle, comprising:  
a first power supply system for being wired in an

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interior of a vehicle through a fuse from a battery and for supplying a power to a running control load of said vehicle;

a second power supply system for being wired in said interior of said vehicle through another fuse from said battery and for supplying the power to an equipment system load of said vehicle; and

a third power supply system for being wired in said interior of said vehicle through a further another fuse from said battery and for supplying the power to a control circuit for controlling said equipment system load.

9. A power supplying control apparatus for a vehicle, comprising:

a vehicle mounting power supply;

a vehicle mounting load for receiving a supply of a power from said vehicle mounting power supply through a driver circuit;

a fuse connected between said vehicle mounting power supply and said driver circuit;

a shutdown circuit provided between said driver circuit and a fuse; and

a control circuit for giving a circuit shutdown signal to said shutdown circuit.

10. A power supplying apparatus for a vehicle, comprising:

a vehicle mounting power supply;

plural control modules having a control circuit in which a load drive signal is generated and a load drive circuit for controlling a power supplying to a load according to a drive signal from said control circuit;

a large power line for supplying a load drive power from said vehicle mounting power supply through one fuse against to at least two said control modules; and

a small power line for supplying a control circuit use power from said vehicle mounting power supply through another fuse against to said control circuit of said respective control modules.

11. In a load control module which is installed to a specific position of a vehicle, the load control module for a power supplying apparatus for a vehicle, comprising:

a communication circuit connected to another module through a communication line;

a control circuit for outputting a control signal of a load in accordance with a signal which is inputted through said communication circuit;

a battery;

a drive circuit for controlling a power supplying to said load in accordance with an output signal from said control circuit;

a relay for opening and closing a power line to a specific load by an output from said control circuit; and

a fuse connected between said battery and said specific load and for fusing when an over-current is flown into said specific load.

- 5 12. A power supplying apparatus for a vehicle according to claim 8, the power supplying apparatus comprising further:

an ignition coil switch and/or an accessory switch connected to said battery through another fuse; and

- 10 another power supply system for supplying a power through from said ignition coil switch and/or said accessory switch to a further another fuse.

13. A power supplying apparatus for a vehicle, comprising:

a load control apparatus for receiving a load drive power from a vehicle mounting power supply through an ignition switch and a fuse which is connected in series to said ignition switch;

- 20 another control apparatus for receiving the power from said vehicle mounting power supply through another fuse; and

- a backup power supply supplying line for supplying the power from said another control apparatus to said load control apparatus.
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14. A power supplying apparatus for a vehicle,  
comprising:

a control apparatus in which a power is distributed  
from a vehicle mounting power supply through a fuse;

5 a shutdown apparatus provided an electric path of a  
power take-in portion of said control apparatus;

a driver circuit for supplying the power to a load  
through said shutdown apparatus;

10 another driver circuit for supplying the power to  
another load by going by a roundabout circuit of said  
shutdown apparatus.

15. A power supplying apparatus for a vehicle,  
comprising:

15 a relay and/or fuse for opening a power line between  
a load and a power supply in a specific control condition  
being disperse arranged at a vicinity of plural control  
apparatuses which are arranged at a specific position of  
said vehicle.

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16. A power supplying apparatus for a vehicle,  
comprising:

25 to a specific load, from a vehicle mounting power  
supply, a power being supplied through a fuse, a circuit  
shutdown relay, and a self shutdown type semiconductor  
switching element.

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an output interface for outputting said load drive signal to a driver circuit from said control circuit.

19. A power supplying apparatus for a vehicle according to claim 18,

said input interface has a communication circuit.

20. A power supplying apparatus for a vehicle according to claim 18,

a fuse is connected between said relay contact and said specific load.

21. A power supplying apparatus for an automobile, comprising:

a rear control module installed to an area of a rear portion from a front portion seat of the automobile;

a front control module installed to an area of a front portion from said front portion seat of the automobile;

a central control module installed between said front control module and said rear control module of the automobile;

a rear side electric power line for connecting said rear control module and a battery;

a front side electric power line for connecting said front control module and said central control module to said battery;

an ignition switch connected to an input interface of said central control module;

an ignition relay coil connected to a communication line said front control module;

5 an ignition relay contact for closing/opening in which said ignition relay coil is supplied or shutdown the power by a signal of said ignition switch which is inputted to said input interface of said front control module from said central control module; and

10 a specific load in which the power from said front side electric power line is supplied through said ignition relay contact.

22. A power supplying apparatus for an automobile according to claim 21, comprising:

a fuse connected to between said ignition relay contact and said specific load.

23. A power supplying apparatus for an automobile according to claim 22, comprising:

said specific load being an alternator and/or a stator.

24. A power supplying apparatus for an automobile according to claim 22, comprising:

said ignition relay and said fuse received in a relay/fuse box which is provided adjacently to said control

module.

25. A power supplying apparatus for an automobile, comprising:

5 a load drive control use drive circuit provided between a power supply of said automobile and a specific load;

a relay provided between said load drive control use drive circuit and said power supply;

10 a sleep control circuit for opening a relay contact by stopping the current flowing a coil of said relay and performing a shutdown an electric line to said specific load by a detection in which said automobile is not operated and said specific load is not needed a power.

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